

Amendments to the Specification:

1. Page 1, please replace the title of the invention by the following title:

CONSOLIDATION AGENTS AND THE USE THEREOF FOR CONSOLIDATING
MOLDED BODIES AND GEOLOGICAL FORMATIONS CONSISTING OF
POROUS OR PARTICULATE MATERIALS

2. Page 1, before the first paragraph but after the title, please insert the following:

CROSS-REFERENCE TO RELATED APPLICATIONS

The present application is a U.S. National Stage of International Application No. PCT/EP2005/000871, filed January 28, 2005, which claims priority of German Patent Application No. 10 2004 004615.8, filed January 29, 2004.

BACKGROUND OF THE INVENTION

1. Field of the Invention

3. Page 1, before the second paragraph, please insert the following:

2. Discussion of Background Information

4. Page 2, after the first paragraph, please insert the following:

SUMMARY OF THE INVENTION

The present invention provides a consolidation agent for molded articles and geological formations comprising porous and/or particulate materials. The agent

comprises a hydrolysate and/or a precondensate of (a) one or more organosilanes of formula (I)



wherein the radicals R independently represent non-hydrolysable groups, the radicals X independently represent hydrolysable groups or hydroxyl groups, and n is 1, 2 or 3; and (b) optionally, one or more hydrolysable silanes of formula (II)



wherein the radicals X are as defined for formula (I).

In one aspect of the agent, the radicals X may comprise one or more radicals selected from halogen, alkoxy and acyloxy groups. For example, they may comprise one or more radicals selected from C₂₋₄ alkoxy groups.

In another aspect of the agent, the radicals R may comprise one or more radicals selected from C₁₋₄ alkyl groups and aryl groups. For example, the radicals R may comprise one or more radicals selected from methyl and ethyl and/or may comprise a phenyl group.

In yet another aspect, the agent of the present invention may comprise a hydrolysate and/or a precondensate of compounds comprising (a1) an alkylsilane, (a2) an arylsilane and (b) an orthosilicic ester. For example, the agent may comprise a hydrolysate and/or a precondensate of compounds comprising

or consisting of methyltriethoxysilane, phenyltriethoxysilane and tetraethoxysilane.

In a still further aspect of the agent of the present invention, the hydrolysate and/or precondensate may have been prepared in the presence of one or more metal compounds of formula (III)



wherein M is selected from metals of the main groups I to VIII and the subgroups II to VIII of the Periodic Table of Elements and wherein the radicals X independently represent hydrolysable groups or hydroxyl groups and two radicals X may be combined to form an oxo group and a corresponds to the valence of M. For example, the one or more metal compounds may comprise at least one metal M which is selected from Al, B, Sn, Ti, Zr, V and Zn, e.g., from Al, Ti and Zr. In another aspect, the one or more metal compounds of formula (III) may comprise one or more alkoxides of at least one of Na, K, Al, Zr and Ti.

In another aspect, the agent may have been prepared according to the sol-gel process using a substoichiometric amount of water relative to the hydrolysable radicals X present.

The present invention also provides a solution or emulsion which comprises the consolidating agent of the present invention as set forth above, including the various aspects thereof.

The present invention also provides a process for preparing a consolidated molded article. The process comprises mixing and/or coating a material which is porous and/or particulate with the consolidating agent of the present invention as set forth above, including the various aspects thereof, and thereafter curing the agent. The present invention also provides a consolidated molded article which is obtainable by this process as well as process for consolidating a geological formation wherein the consolidated molded articles are introduced into channels within the geological formation.

In one aspect of the process, the consolidating agent may be activated by the addition of water prior to being combined with the material to be consolidated.

The present invention also provides a process for consolidating a porous and/or particulate geological formation. The process comprises injecting the consolidating agent of the present invention as set forth above, including the various aspects thereof, into the formation and/or infiltrating the formation with the agent and thereafter curing the agent.

In one aspect of this process, the formation may be oil-bearing and comprise sand.

DETAILED DESCRIPTION OF THE INVENTION

P30186.A01

5. Page 13, first line, please replace "CLAIMS" by "WHAT IS CLAIMED IS:"

6. Page 15, please replace "ABSTRACT" by "ABSTRACT OF THE DISCLOSURE" and delete the title of the invention.